

CLAIMS

What is claimed is:

1. A method for treating diabetes in a subject, said method comprising:
5 admixing at least one phenserine compound or phenserine-like compound, and salts
or esters thereof, and a pharmaceutically acceptable diluent, carrier or
excipient to form a medicament; and
administering the medicament to the subject, thereby treating diabetes in said
subject.

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2. The method according to claim 1, wherein the phenserine compound
is selected from the group consisting of (-)-N-phenylcarbamoyl eseroline,
(3aS)-1,3a,8-trimethyl-1,2,3,3a,8,8a-hexahydropyrrolo[2,3-b]indol-5-yl
phenylcarbamate; (-)-2'-methylphenylcarbamoyleseroline,
15 (-)-2'-4'-dimethylphenylcarbamoyleseroline, (-)-4'methylphenylcarbamoyleseroline,
(-)-2'-ethylphenylcarbamoyleseroline, (-)-phenylcarbamoyleseroline,
(-)-(-)-2',4',6'-trimethylphenylcarbamoyleseroline,
(-)-2'-chlorophenylcarbamoyleseroline, (-)-2',6'-dichlorophenylcarbamoyleseroline,
(-)-physovenol, (-)-5-O-(2'-methylphenylcarbamoyl)physovenol, (-)-3, 3a, 8,
20 8a-tetrahydro-3a, 8-dimethyl-2H-thieno-[2,3-b]indole-5-ol butyl carbamate, (-)-3,
3a,8,8a-tetrahydro-3a,8-dimethyl-2H-thieno[2,3-b]indole-5-ol heptylcarbamate,
(-)-3,3a,8,8a-tetrahydro-3a,8-dimethyl-2H-thieno[2,3-b]indole-5-ol
phenylcarbamate,
(-)-3,3a,8,8a-tetrahydro-3a,8-dimethyl-2H-thieno[2,3-b]indole-5-ol
25 2'-methylphenylcarbamate,
(-)-3,3a,8,8a-tetrahydro-3a,8-dimethyl-2H-thieno[2,3-b]indole-5-ol
2'-isopropylphenylcarbamate, (-)-thiaphysovenine, (-)-Phenylthiaphysovenine, and
(-)-2',4'-dimethylphenyl-thiaphysovenine.

30 3. The method according to claim 2, wherein the phenserine-like
compound is selected from the group consisting of donepezil, galantamine,
rivastigme and tacrine.

4. The method according to claim 2, wherein the phenserine compound comprises (-)-N-phenylcarbamoyl eseroline or a salt or ester thereof.
5. The method according to claim 1, claim 2, claim 3 or claim 4, wherein treating diabetes comprises delaying onset of a cognitive impairment associated with diabetes.
6. The method according to any one of claims 1-5, wherein treating diabetes comprises treating gestational diabetes.
- 10 7. The method according to any one of claims 1-6, wherein treating diabetes comprises a prophylactic treatment of diabetes.
- 15 8. The method according to any one of claims 1-7, wherein treating diabetes comprises treating cerebral angiopathy.
9. The method according to any one of claims 1-8, wherein the subject is a human above the age of 60 years.
- 20 10. The method according to any one of claims 1-9, further comprising administering said phenserine compound or phenserine-like compound prior to a meal.
- 25 11. The method according to claim 10, further comprising coadministering a hypoglycemic agent selected from the group consisting of a sulfonylurea, a meglitinide, a biguanide, a thiazolidinedione, an alpha-glucosidase inhibitor and mixtures thereof.
- 30 12. The method according to any one of claims 1-11, wherein treating diabetes comprises treating at least one condition selected from the group consisting of hyperglycaemia, hypoglycaemia, response to hypoglycemic agents, diabetic

neuropathy, diabetic retinopathy, kidney function, vascular dementia, ketone levels, hyperlipidaemia, and coronary artery disease.

13. The method according to any one of claims 1-5, 7, and 9-12, wherein
5 treating diabetes comprises treating insulin resistance.

14. Use of an acetylcholinesterase antagonist for the preparation of a medicament useful in the treatment of complications associated with diabetes.

10 15. Use of the acetylcholinesterase antagonist of claim 14, wherein the acetylcholinesterase antagonist is phenserine.

16. Use of the acetylcholinesterase antagonist of claim 14 or claim 15 for the preparation of a medicament useful in the treatment of vascular dementia.

15 17. Use of the acetylcholinesterase antagonist of claim 14 or claim 15 for the preparation of a medicament useful in delaying the onset of diabetes associated cognitive impairment.

20 18. Use of the acetylcholinesterase antagonist of claim 14 or claim 15 for the preparation of a medicament useful in the treatment of insulin resistance.